Company Exhibit _____

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Provide for a Standard Service Offer Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan	)))))))	Case No. 14-1297-EL-SSO

SUPPLEMENTAL TESTIMONY

OF

RODNEY L. PHILLIPS

ON BEHALF OF

OHIO EDISON COMPANY, THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, AND THE TOLEDO EDISON COMPANY

May 4, 2015

Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A. My name is Rodney L. Phillips. I am employed by FirstEnergy Service Company as Director of Transmission Operations. My business address is 76 South Main, Akron, Ohio 44308.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS, EMPLOYMENT EXPERIENCE, AND EDUCATIONAL BACKGROUND.

A. I hold a Bachelor of Science degree in Electrical Engineering from West Virginia University. I am also a Registered Professional Engineer in West Virginia. I have spent 31 years with subsidiaries of FirstEnergy Corp. ("FirstEnergy") or its predecessor companies, working in a variety of transmission-related positions including transmission planning and system operations. I began my career in 1983 as an Engineer, Distribution in the Engineering & Construction Department of Monongahela Power Company ("Mon Power"). In 1986, I became an Engineer, Power Services in the Customer Services Group at Mon Power's Morgantown Division Office. In 1988, I worked as a Staff Assistant in Mon Power's Human Resources Department. From 1989 to 1995, I was the Supervisor, Substations in Mon Power's Engineering and Construction Department. In 1995, I became Supervisor, Construction in Mon Power's Engineering and Construction Department. From 1996 to 1999, I was the General Manager, Substation Maintenance for Allegheny Energy. In 1999, I became Director, Operations for Jeannette Region for Allegheny Energy. From 2001 to 2003, I was the Director, Transmission and Distribution Services, for Allegheny Energy. In July of 2003, I became the Director of Planning and System Operations in Allegheny Energy's Transmission & Distribution Department. As Director of Planning and System Operations, I was responsible for

planning the expansion and improvement projects for all transmission and distribution infrastructure and then insuring the security, reliability and integrity of the transmission and distribution system via the actions of the Transmission Control Center and Distribution Dispatch Center. In 2005 I became Director, System Operations in Allegheny Energy's Transmission Department. From 2006 to 2007, I was Director, Transmission Planning & Operations for Allegheny Energy's Transmission Department. As Director of Transmission Planning and Operations, I was responsible for insuring the security, reliability and integrity of the transmission and distribution system via the real-time actions of the Transmission Control Center and for the infrastructure planning of Allegheny Energy's transmission and sub-transmission system. In July of 2007, I became Executive Director, Transmission Engineering and Operations in Allegheny Energy's Transmission Department. I was responsible for Transmission Planning, Transmission System Operations, Transmission Engineering Support and Standards, Transmission Field Operations, Transmission Forestry, Technical Services, Network Fiber Operations and Facilities. From 2011 to 2012, I was Director, Operations Support in Mon Power's Operations Support Department.

I assumed my present position on August 12, 2012. As Director of Transmission Operations, I am responsible for overseeing the monitoring and operation of FirstEnergy's transmission system to ensure safe and reliable operations via the actions of the Transmission Control Centers. In addition, my group bears responsibility for outage scheduling, operator training, compliance and procedures, power network analysis and settlements.

Q. DID YOU PREVIOUSLY SUBMIT TESTIMONY IN THIS PROCEEDING?

A. No. Company witness Gavin L. Cunningham previously submitted testimony. However, he is retiring. Mr. Cunningham's direct testimony quantified the conservative cost of additional transmission upgrades that would be necessary as a result of (i) already announced planned retirements, and (ii) the closure of the Davis-Besse Nuclear Power Station ("Davis-Besse") and the W.H. Sammis Plant ("Sammis") (collectively, the "Plants"). I have reviewed Mr. Cunningham's direct testimony and Exhibit GLC-1, and, with minor adjustments to the results of the transmission impact study, I have determined their methodology and conclusions are correct. I am adopting Mr. Cunningham's direct testimony and Exhibit GLC-1 as my own.

Q. PLEASE EXPLAIN YOUR ADJUSTMENTS TO THE RESULTS OF THE TRANSMISSION IMPACT STUDY AND THE DIRECT TESTIMONY.

A. Witness Cunningham provided a conservative estimate that the total costs of the upgrades necessary to address the needs identified by the transmission impact study would exceed $442 million. I am making the following adjustments to that conservative estimate: (1) The transmission impact study identified the need for two terminal equipment upgrades estimated to cost a total of $20 million. Using updated information, I estimate the cost of the upgrades to be $3.5 million. (2) I would use different per-mile cost estimates for re-conductoring three of the 345 kV facilities, resulting in total reduced costs of $20 million. (3) I would also use a different multiplier for a fourth 345 kV facility, resulting in increased costs of $31 million. With these adjustments, the conservative estimate for the total cost of the upgrades necessary to address the violations identified by the transmission impact study is $436.5 million.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?

A. My supplemental testimony will address the necessity of Sammis and Davis-Besse, in light of future reliability concerns, as well as the impact that a closure of the Plants would have on electric prices. The direct testimony that I adopt here explained that the removal of a large baseload generating plant like Sammis or Davis-Besse from the transmission grid: (a) affects the real and reactive power flow across the grid, (b) can have a significant adverse impact on system reliability, and (c) often negatively impacts the ability of the power system to withstand sudden, unexpected disturbances. That testimony conservatively estimated the cost of transmission upgrades necessary to maintain reliability, if it became necessary to retire Davis-Besse and Sammis, at $436.5 million.

Q. IF THE TRANSMISSION UPGRADES IDENTIFIED IN THE TESTIMONY YOU ADOPT CAN MAINTAIN RELIABILITY, ARE THE PLANTS STILL NECESSARY FOR FUTURE RELIABILITY?

A. Yes. The transmission upgrades identified will enable the system to mitigate the violations of PJM's reliability standards. They will maintain but not improve upon current reliability. Generators play a key role in the real time operation of the system. In addition to providing real and reactive power, they are used to help alleviate the reliability issues (i.e., thermal overloads, high/low system voltage and or excessive system voltage drops) that could occur during normal conditions, planned outages and/or unplanned outages on the system. For plants like Sammis, generation re-dispatch is used extensively to manage the transmission constraints that occur on the system in real-time. When generators are removed from the system, a key tool for operators is no longer available for them to utilize. When generation re-dispatch is not an option to address a

reliability problem (as may occur when there are outages on the transmission system), system operators must rely on system reconfiguration (e.g., a switching solution where lines or transformers are removed from service) or various emergency procedures (including load shed). A system depending on wires to replace generation is more vulnerable to having generation separated (i.e., disconnected) from the load centers. The simple fact is that increasing distance between generation and a load center increases the potential for outages on the transmission system (scheduled or unscheduled outages) to affect reliability at the load center. For this reason, ideally, the system generation resources are located in close electrical proximity to the load centers, as was the historic practice in the industry.

This applies equally to the retirements of approximately 2,400 megawatts ("MW") of coal-fired power plants in Ohio between 2012 and 2015, which was discussed in the direct testimony. As that testimony explained, these retirements led to identification of 38 separate transmission upgrades estimated to cost customers approximately $1 billion. The projects were designed to maintain reliability, not improve it. Put another way, customers will pay an estimated $1 billion more in costs for no improved reliability outcome.

Q. DOES OHIO HAVE SUFFICIENT GENERATION LOCATED IN CLOSE ELECTRICAL PROXIMITY TO LOAD?

A. No. Ohio is a large net importer of power, according to data maintained by the Energy Information Administration.[1] This deficit is trending upward and is exacerbated by retirements of Ohio generation that are outpacing additions of new Ohio capacity.

[1] Table 10, http://www.eia.gov/electricity/state/Ohio/xls/sept10oh.xls.

According to data maintained by PJM, 4,292 MW of Ohio coal generation deactivated since 2005.[2] Another 1,925 MW of Ohio coal generation is scheduled to be deactivated later in 2015.[3] Meanwhile, only 1,207 MW of natural gas generation was placed into service in Ohio between 2005 and 2014.[4] There is significant reliability and economic risk for Ohio in entrusting system reliability to out-of-state generators sending power on not-yet-built transmission lines.

Q. TO MAINTAIN RELIABILITY, CAN RECENTLY QUEUED GENERATION PROJECTS REPLACE THE PLANTS?

A. No. Most projects in the PJM queue never break ground. For example, as of December 2014, new projects that have entered the Feasibility Study phase had only a 14.6% historical probability of going into service.[5] It is common for developers to withdraw a generation project from the PJM queue. Further, potential natural gas generation would lack the important qualities of baseload nuclear and coal plants with significant on-site fuel supply to withstand extreme weather events and other interruptions of just-in-time fuel supply.

Q. WHAT DO YOU MEAN WHEN YOU REFERENCE THE TRANSMISSION IMPACT STUDY'S $436.5 MILLION COST ESTIMATE AS CONSERVATIVE?

A. In an effort to model a more "best case scenario" (i.e. lower costs to customers) the transmission impact study assumed that overloaded lines could be merely re-conductored.

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[2] Generation Deactivation Summary Sheet, available at http://www.pjm.com/planning/generation-deactivation/gd-summaries.aspx.

[3] Future Deactivation Requests Summary Sheet, available at http://www.pjm.com/planning/generation-deactivation/gd-summaries.aspx.

[4] Ohio State Profile and Energy Estimates, available at http://www.eia.gov/state/?sid=OH.

[5] 2014 PJM Interconnection Queue Statistics Update, available at http://pjm.com/~/media/committees-groups/committees/pc/20150107/20150107-item-07-queue-statistics-20150107.ashx (January 7, 2015).

Q. COULD SOME OF THE OVERLOADED FACILITIES REQUIRE REBUILDING INSTEAD?

A. Yes. It is very likely that certain lines would need to be rebuilt because of the larger conductor being installed or because of the age or condition of the existing facilities. Rebuilding a line would necessarily significantly increase the cost of that transmission upgrade.

Q. IF IN A BEST CASE SCENARIO, THE TRANSMISSION IMPACT STUDY YIELDS A LOW END COST OF $436.5 MILLION, THEN WHAT IS THE HIGHER END AMOUNT?

A. At the other end of the spectrum, if we assume all the transmission upgrades consist of rebuilds instead of re-conductoring, the estimated cost of the upgrades increases to nearly $1.1 billion. Assuming it is not necessary to build any more expensive new facilities (e.g., new lines, new substations), the actual costs of transmission upgrades necessitated by the retirement of Sammis and Davis-Besse would fall within this range of between $436.5 million and $1.1 billion.

Q. WOULD RETIREMENT OF THE PLANTS CREATE OTHER COSTS IN ADDITION TO THE COSTS OF TRANSMISSION UPGRADES?

A. Yes. When the transmission facilities are being upgraded, they will need to be removed from service for extended periods of time to perform the necessary re-conductoring and/or rebuilding upgrades. Some or all of these outages will result in transmission congestion (constraints) on the transmission system. PJM will dispatch one or more of the generating units out of economic merit in order to keep transmission flows within limits and this results in increased Transmission Congestion Costs.

Q. WOULD REMOVING TRANSMISSION FACILITIES FROM SERVICE TO PERFORM THE NECESSARY UPGRADES IMPACT RELIABILITY?

A. Yes. Because of the large number of facilities needing to be upgraded, many of these required extended outages will need to occur simultaneously in order for the upgrades to be completed in an acceptable timeframe. These upgrade outages will also overlap with other construction/maintenance outages on the system, causing even greater stress on the transmission system. In addition, these outages put the system at a greater risk for the impact of additional unplanned forced outages.

Q. ARE THERE OTHER CONSTRUCTION SCENARIOS THAT WOULD BE CONSIDERED?

A. Yes. As I mentioned, in addition to just re-conductoring or rebuilding the overloaded facilities, transmission planning also studies if other new facilities would provide better alternatives for solving the identified reliability issues. The ultimate solution will not be the best-case, least cost scenario consisting entirely of re-conductors. As noted above, a solution consisting entirely of re-conductors or rebuilt facilities would require a large number of facilities to be out of service at one time, creating potential reliability risks and congestion costs. Therefore, PJM and transmission owners would review new facility options. While new construction projects were being performed, there would be less stress and constraints on the transmission system. PJM and transmission owners will likely develop a solution that consists of a combination of new facilities and re-conductoring/rebuilding of existing facilities. This was the case with the transmission projects necessitated by the retirements of approximately 2,400 MW of coal-fired power plants in Ohio between 2012 and 2015. The majority of those projects were new construction projects (e.g., new lines, new transformers, new substations, and new

capacitors). The inclusion of such new facilities will move the cost of the reliability solution away from the lower end of the cost spectrum and toward the higher end.

Q. HOW ARE THE COSTS OF THESE TRANSMISSION UPGRADES ALLOCATED TO CUSTOMERS?

A. Schedule 12 of the PJM Open Access Transmission Tariff governs allocation of the costs of reliability-based transmission enhancements. It is difficult to predict how the costs of projects necessitated by the retirements of Sammis and Davis-Besse would be allocated among customers. This is because the ultimate combination of new facilities and re-conductored or rebuilt existing facilities that will be determined by PJM and transmission owners is unknown. What we do know, however, is that customers of the Companies, as well as other Ohio customers, will bear some of the costs. For example, for the transmission projects necessitated by the retirements of approximately 2,400 MW of coal-fired power plants in Ohio between 2012 and 2015, approximately 89% of the estimated $1 billion in costs were allocated to Ohio, and customers of the Companies were responsible for approximately 82% of the costs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. I reserve the right to supplement my testimony.

Summary: Testimony Supplemental Testimony of Rodney L. Phillips electronically filed by Mr. Nathaniel Trevor Alexander on behalf of Ohio Edison Company and The Cleveland Illuminating Company and The Toledo Edison Company